

Attachment 1

ATTACHMENT 1
Statement of Public Need

The proposed facility will provide wireless communications service along Route 67, local roads and surrounding areas in the Town of Roxbury as well as portions of Southbury and Woodbury. The facility is needed by AT&T in conjunction with other existing and proposed facilities in Roxbury and the adjoining towns of Woodbury and Southbury. Included in this attachment are a Radio Frequency (“RF”) Report with propagation plots identifying and depicting the specific need for a Facility in this area of the State. The gap in coverage is significant in that it includes State Route 67, local roads and residential areas. Additionally, a spreadsheet with information concerning existing facilities in the area is also included. As clearly demonstrated by these materials, a facility in this area of Roxbury is required for AT&T to serve the public in this area.



RADIO FREQUENCY ENGINEERING REPORT

Proposed Roxbury, CT Wireless Facility S1876 Roxbury



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Overview

This document is provided in support of AT&T's proposal to operate a ground mounted, wireless telecommunication facility in the Town of Roxbury.

This document addresses AT&T's need for the proposed facility and validates that there are no other existing structures that meet AT&T's coverage objective for this area. The proposed facility located either on Transylvania Road or on Southbury Road in the town of Roxbury at a proposed height of 167 feet above ground level will best address the coverage objective and provide the needed interconnectivity to AT&T's existing neighboring sites and surrounding communities.

Introduction

As enabled under its Federal Communications Commission ("FCC") Licenses, AT&T seeks to design its wireless network to provide reliable and adequate wireless services to its customers, whether those customers are on the street, in a vehicle, or in a building. Providing reliable and adequate service to its customers in each context is critical for AT&T to provide the quality of wireless service that customers demand, and to meet objectives of Congress that a robust, competitive and low cost wireless communications capacity be developed to serve the entire nation.

In order to build out its network and meet customer demand for voice and data services, AT&T must have in place a system of low power "cell sites" to serve portable wireless communication handsets and mobile telephones. A typical cell site, such as the one proposed, consists of antenna mounted to a building, tower, church or other structure. The antennas are connected to radio operating equipment housed at or near the structure.

To maintain effective, reliable and uninterrupted service, there must be a continuous series of cell sites located within close proximity to each other so as to overlap in a system comparable to a honeycomb pattern. If there is no cell site available to accept/receive the signal, network service to the mobile telephone/data service will terminate involuntarily. Accordingly, the overlap of coverage is necessary for the signal to transfer from one cell to another cell site seamlessly and without involuntary termination.

A number of factors determine the distance between the cell sites, including, but not limited to, topography, physical obstructions, foliage, antenna height, operating frequency and line-of-site.

Coverage Objective

AT&T currently has two existing facilities that serve some of Roxbury. The first existing facility is located in the town of Woodbury, near the Roxbury town line (AT&T site CT1172) and the other is located close to the center of Roxbury (AT&T site CT2089). Current coverage in Roxbury is primarily being provided by these two sites.

Map 1, titled, “AT&T Current Coverage in Roxbury, CT”, is a propagation plot that depicts current coverage in the southern part of Roxbury and surrounding towns. Note: This map includes coverage from 2 new site locations that are approved but not yet constructed. In Map 1 the majority of the southern part of Roxbury has marginal or very poor coverage and large sections have no coverage at all. It also shows that there is inadequate coverage overlap between existing sites CT2089 and CT2066.

In the map, “green” (\Rightarrow -74 dBm) represents “in-building” coverage which allows for signal penetration losses (solid walls, partitions, etc.) of 10 dB. Color “yellow” represents “in-vehicle” (\Rightarrow -82 dBm) which takes into account 5 to 8 dB of vehicle penetration attenuation.

AT&T determined that significant coverage gaps exist particularly in the following roads:

- Transylvania Road, Roxbury Road
- Rucum Road, Upper Grassy Hill Road, Coachmans Dr
- State HW 67 (Southbury Rd.) in the town of Roxbury

Improving the coverage on above mentioned roads would not only benefit commuters but also provides better signal penetration on houses and other establishments within the area as well. Map 2, titled, “AT&T Composite Coverage in Roxbury, CT”, shows the existing coverage in this area of Roxbury and proposed coverage from AT&T’s proposed facility on Transylvania Road. Map 3, titled, “AT&T Composite Coverage in Roxbury, CT”, shows the existing coverage in this area of Roxbury and proposed coverage from AT&T’s proposed facility on Roxbury Road. Comparisons of Map 1 and Map 2, and Map 1 and Map 3 clearly show the roads mentioned above that will have coverage after adding the proposed site in either location. This would mean better quality and uninterrupted service for subscribers travelling between these roads as well as better signal penetration for houses, business establishments, etc. The following tables will show the area and population in this area that will have service from the proposed facilities.

Table 1 below shows the area analysis for current and proposed coverage. The current uncovered area of 15.46 square miles will be reduced to 12.06 square miles (Transylvania) or 13.33 square miles (Southbury), which is equivalent to 22% or 14% area gained, respectively.

Area Coverage (sq mi)							
Proposed Location	Roxbury Total Area	Current Area Covered (\Rightarrow -82 dBm)	Current Area Uncovered ($<$ -82 dBm)	Proposed Area Covered (\Rightarrow -82 dBm)	Proposed Area Uncovered ($<$ -82 dBm)	Proposed Area Gain	Proposed Area % Gain
Transylvania	26.27	10.81	15.46	14.21	12.06	3.40	22%
Southbury	26.27	10.81	15.46	12.94	13.33	2.13	14%

Table 1: Area Coverage Analysis

Table 2 below shows the population analysis (2008 Census Block Data) for current and proposed coverage. The current uncovered population of 1352 will be reduced to 982 or 1120, which is equivalent to 27.37% or 17.16% population gained.

Population Coverage (2008 Census Block Data)							
Proposed Location	Roxbury Total Pops	Current Pops Covered (>= -82 dBm)	Current Pops Uncovered (< -82 dBm)	Proposed Pops Covered (>=-82 dBm)	Proposed Pops Uncovered (< -82 dBm)	Proposed Pops Gain	Proposed Pops % Gain
Transylvania	2374	1022	1352	1392	982	370	27.37%
Southbury	2374	1022	1352	1254	1120	232	17.16%

Table 2: Population Coverage Analysis

Table 3 below shows the only road with average daily traffic data available from CT DOT website.

Street Name	Average Daily Traffic (CT DOT 2008)
State HW. 67 (Southbury Rd.)	3900

Table 3: Average Daily Traffic

Table 4 below includes the proposed facilities and AT&T's existing and approved surrounding sites

Name	Longitude	Latitude	Address	City	Structure	Status	Antenna Centerline (ft)
S1876(a)	-73.2667417	41.529467	126 Transylvania Road	Roxbury	Monopole	Proposed	167
S1876(b)	-73.262825	41.51495278	Southbury Road	Roxbury	Monopole	Proposed	167
S2039	-73.354364	41.509119	89 Wewaka Brook Road	Bridgewater	Monopole	Approved	180
S2040	-73.302875	41.506186	316 Perkins Road	Southbury	Monopole	Approved	120
CT2001	-73.437474	41.599403	33 Boardman Road	New Milford	Stealth	On_Air	120
CT2155	-73.408582	41.590853	4 Elkington Farm Road	New Milford	Monopole	On_Air	154
CT2260	-73.424857	41.535136	100 Old Town Park Road	New Milford	Utility	On_Air	175
CT2586	-73.428732	41.493427	33 1/2 Carmen Hill Road	Brookfield	Guyed	Approved	165
CT2185	-73.408305	41.47877	761 Federal Road	Brookfield	Utility	On_Air	97
CT5075	-73.403899	41.452592	2 Huckleberry Hill Road	Brookfield	Stealth	On_Air	57
CT1271	-73.333903	41.466947	24 Dinglebrook Lane	Newtown	Monopole	On_Air	150
CT2089	-73.292221	41.559603	35 Lower County Road	Roxbury	Self-Support	On_Air	133
CT1172	-73.256774	41.557245	478 Good Hill Road	Woodbury	Self-Support	On_Air	124
CT1279	-73.227639	41.573075	85 Paper Mill Road	Woodbury	Monopole	On_Air	147
CT1168	-73.179671	41.567989	186 Minortown Road	Woodbury	Self-Support	On_Air	80
CT2066	-73.220735	41.521998	103 Great Hollow Road	Woodbury	Monopole	On_Air	137
CT2087	-73.165277	41.493575	1432 Old Waterbury Road	Southbury	Monopole	On_Air	195
CT2086	-73.205555	41.471186	231 Kettletown Road	Southbury	Monopole	On_Air	185
CT2126	-73.244999	41.459964	Horse Fence Hill Road	Southbury	Monopole	On_Air	154
CT5183	-73.251699	41.448892	98 Russian Village Road	Southbury	Monopole	On_Air	131
CT5658	-73.146599	41.465092	106 Willenbrock Road	Oxford	Monopole	On_Air	117
CT2202	-73.152752	41.446981	691 Oxford Road	Oxford	Monopole	On_Air	100
CT2298	-73.182639	41.448661	459 Burr Road	Southbury	Monopole	On_Air	145

Table 4: Existing and Proposed Sites

Summary

The significant coverage gap seen on Map 1, demonstrates the need for an additional site within the area. It clearly shows that current coverage does not provide sufficient coverage overlap between the sites within Roxbury. In other words, existing sites and facilities will not cover the gap in AT&T's service in this area of Roxbury.

Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate.



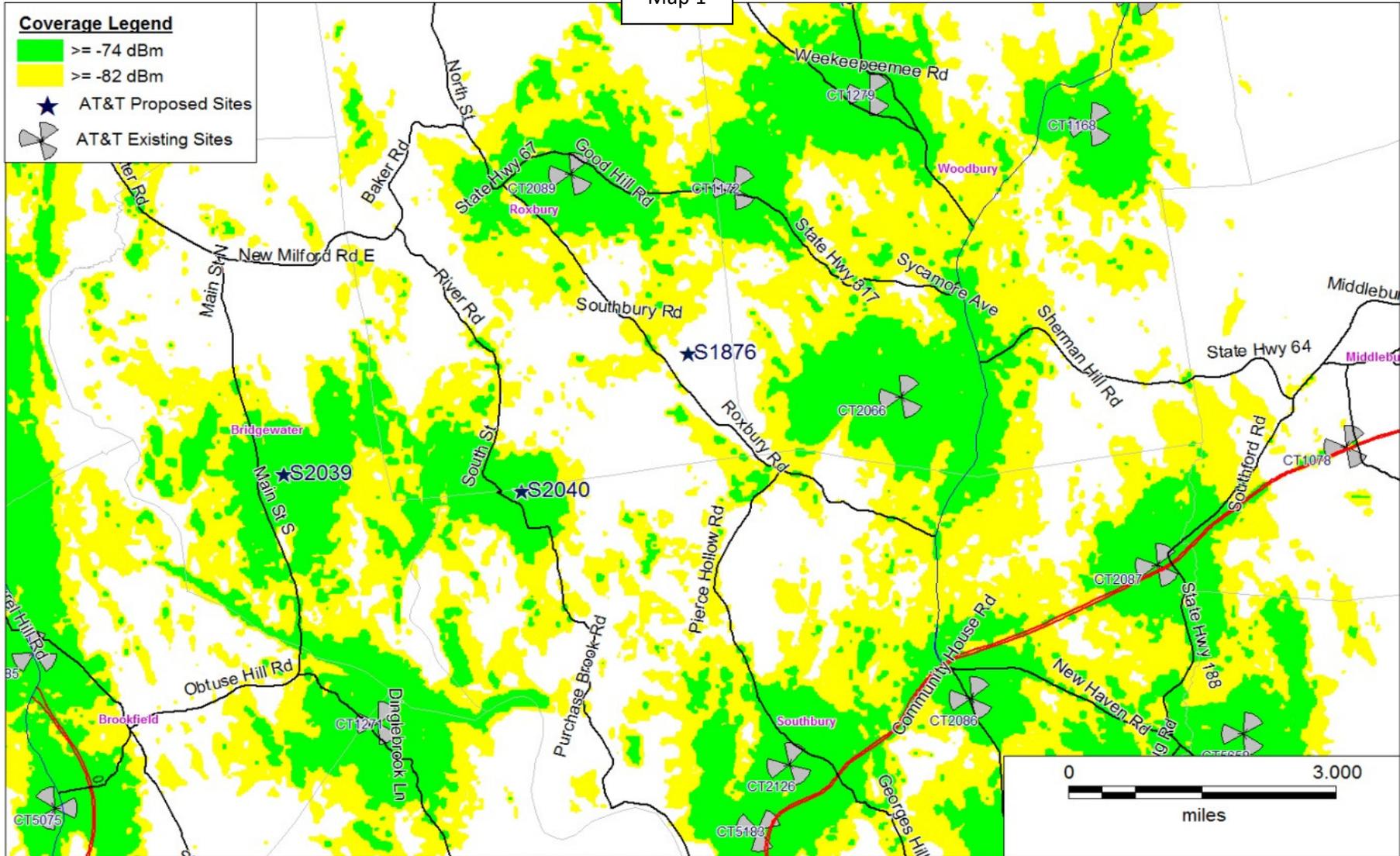
Michael Lawton
SAI Communications

June 27, 2012

Date

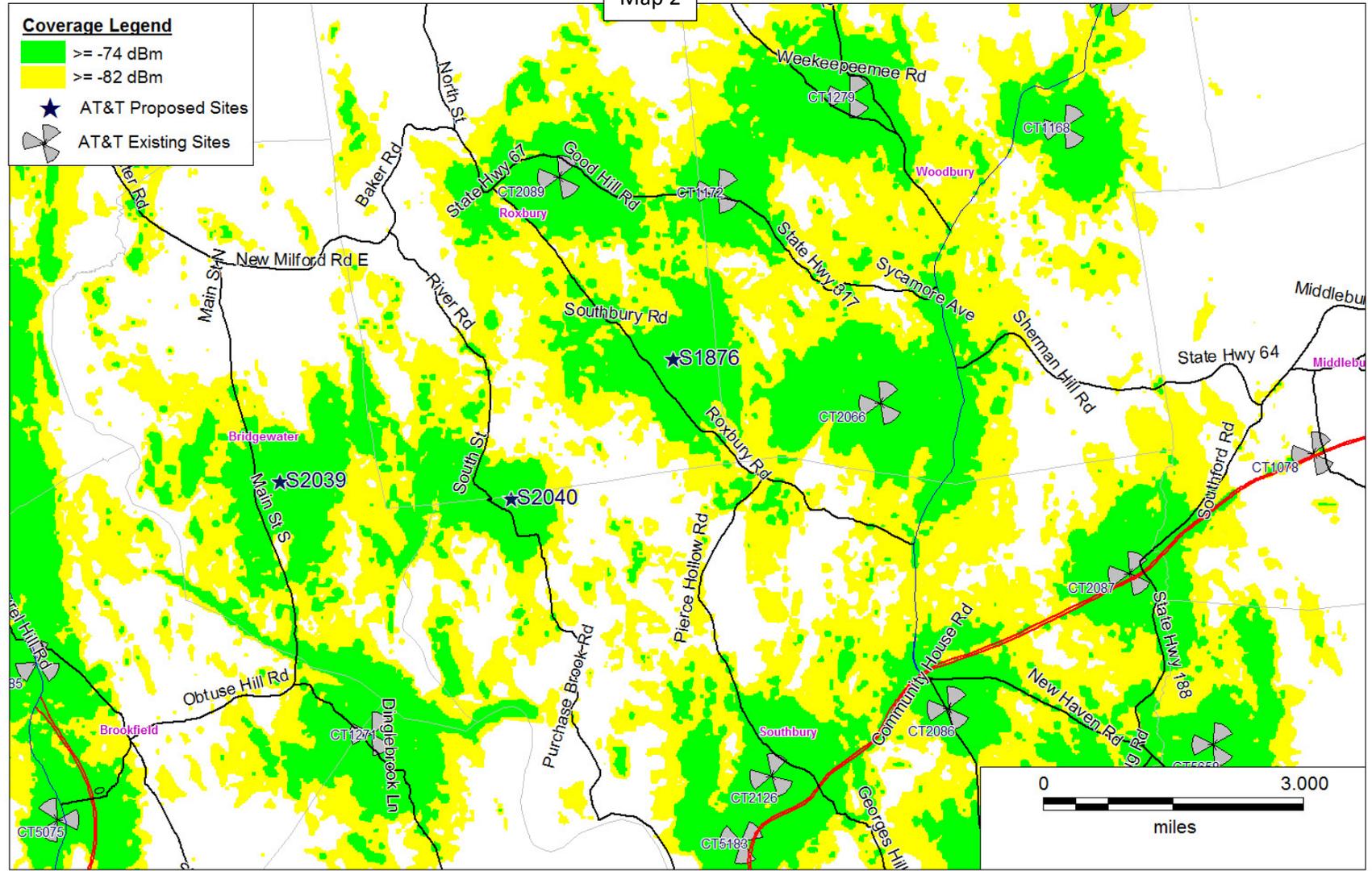
Attachments:

Map 1



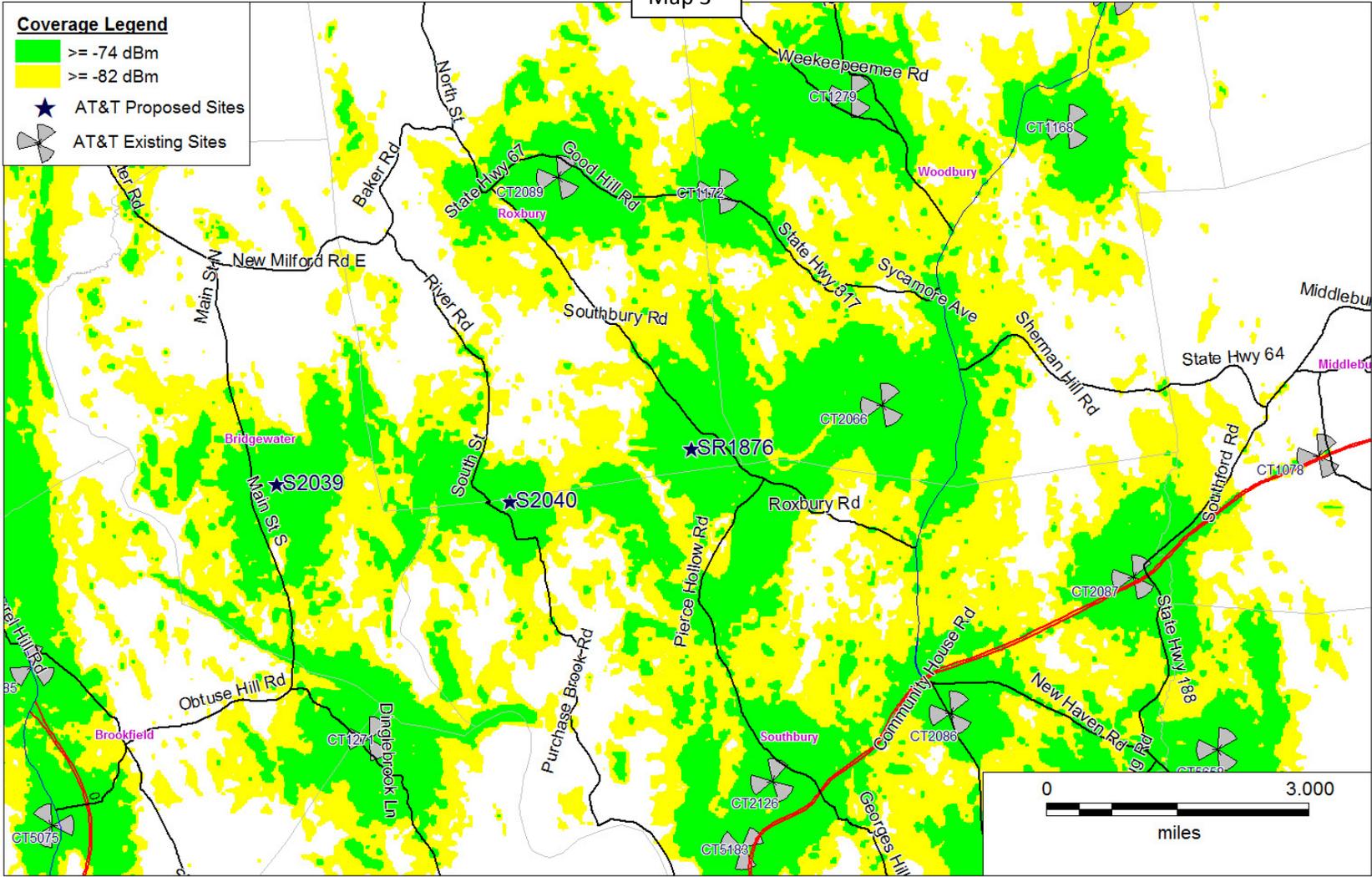
AT&T Current Coverage at Roxbury, CT without S1876

Map 2



AT&T Composite Coverage at Roxbury, CT with S1876 (Transylvania Road)

Map 3



AT&T Composite Coverage at Roxbury, CT with SR1876 (Southbury Road)

Facilities in Roxbury, Southbury and Woodbury

	A	B	D	E	F	G	H	I	J	K	L
1	Roxbury	35 Lower County Rd.	self-supporting lattice	Nextel	180.00	cingular @ 130'	verizon @ 163'	nextel @ 178'			
2	Southbury	11 Lakeside Road (Troop A)	self-supporting lattice	DPS	180.00						
3	Southbury	111 Upper Fish Rock Road	monopole	Verizon	100.00	verizon @ 100'	town @ 100'				
4	Southbury	133 Horse Fence Hill Rd.	Monopole	Spectrasite	150.00	verizon @ 111'					
5	Southbury	1432 Old Waterbury Rd	Monopole	Crown	230.00	verizon @ 228'	t-mobile @ 200'	cingular @ 190'	cing/at&t @ 185'	sprint @ 175'	nextel @ 220'
6	Southbury	214 Russian Village Road	Monopole	Sprint	120.00	nextel @ 110'	t-mobile @ 100'	cing/at&t @ 132'9"			
7	Southbury	231 Kettletown Road	monopole	Omni	195.00	cingular @ 185'	sprint @ 165'	verizon @ 155'	t-mobile @ 195'		
8	Southbury	459 Burr Road	monopole	Optisite	150.00	cingular @ 147'	sprint @ 137'				
9	Southbury	315 Perkins Road	monopole (approved / unbuilt)	AT&T	150.00	at&t @ 150'					
10	Southbury	Swamp Rd. (Southbury Training School)	self-supporting lattice	DPS	180.00	dps @ ?					
11	Woodbury	1440 Main Street North	monopole	Sprint	160.00	cing/at&t @ 130'	nextel @ 140'	verizon @ 150'	cingular @ 120'		
12	Woodbury	186 Minortown Road	monopole	Sprint	100.00	sprint @ 100'	verizon @ 110'	cingular @ 80'/213'			
13	Woodbury	478 Good Hill Road	monopole	AllTel	150.00	cing/at&t @ 148'	verizon @ 134'	cingular @ 124'			
14	Woodbury	202 Great Hollow Road	monopole	Sprint	140.00	sprint @ 110'	cingular @ 140'	verizon @ 130'	nextel @ 120'	t-mobile @ 88'	
15	Woodbury	85 Paper Mill Road	monopole	AT&T	150.00	at&t @ 150'					